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PILOT SHORTAGES AHEAD? AN EXAMINATION OF THE COMPENSATION OF CAREER MILITARY PILOTS AS CONTRASTED TO COMMERCIAL AVIATION AIRLINE PILOTS

MAYNARD L. HOWARD

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Maynard L. Howard

PILOT SHORTAGES AHEAD? AN EXAMINATION OF THE COMPENSATION OF CAREER MILITARY PILOTS AS CONTRASTED TO COMMERCIAL AVIATION AIRLINE PILOTS

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A Research Paper Presented to
the Faculty of the Navy Management School
U. S. Naval Postgraduate School

* * * * *

In Partial Fulfillment
of the Requirements for the Degree
Master of Science in Management

* * * * *

by
Maynard L. Howard
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PILOT SHORTAGES AHEAD? AN EXAMINATION OF THE COMPENSATION OF CAREER MILITARY PILOTS AS CONTRASTED TO COMMERCIAL AVIATION AIRLINE PILOTS

by

Maynard L. Howard

This work is accepted as fulfilling
the thesis requirements for the degree of
MASTER OF SCIENCE
IN
MANAGEMENT
from the
United States Naval Postgraduate School

ABSTRACT

This paper makes a comparison of compensation of military pilots and their contemporaries who are employed as pilots for civil air carriers. It also examines pilot manpower requirements in commercial aviation and estimated future trends of such requirements in the industry. Both areas are studied from the viewpoint of a "composite" military pilot completing his initial period of obligated service after flight training.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	STATEMENT OF THE PROBLEM. . .	1
	Introduction.	1
	The problem.	2
	Purpose.	3
	Assumptions.	4
	Limitations	6
	Summary	7
II.	THE STUDY (PART ONE)	9
	Commercial aviation manpower requirements	10
	Background	10
	The problem.	11
	Manpower requirements	13
	Future losses from Civilian aviation .	20
	Losses from the armed forces to civilian life	25
II.	THE STUDY (PART TWO).	35
	Compensation comparison.	36

CHAPTER PAGE

Basic salary and Allowances: military . 36

Salary and allowances: airlines. . . . 41

Contract provisions: airlines. 44

Retirement benefits: the military . . 51

Retirement benefits: United Air Lines. 54

Benefits: military. 57

Benefits: United Air Lines 60

III. SUMMARY AND CONCLUSIONS. . . . 67

Commercial aviation pilot Requirements 68

Compensation comparison 70

BIBLIOGRAPHY. 74

LIST OF TABLES

TABLE		PAGE
I.	Estimated Losses of Flight Officers from the Certificated Trunk and Local Service Airlines, by Reason, 1964-1980	19
II.	Age Distribution of Pilots, by type of Employer, 1964	21
III.	Age Distribution of Flight Officers in Trunk and Local Service Airlines, 1964	22
VI.	Estimated Age Distribution of Original License Issuances, 1963.	23
V.	Projected Losses of Flight Officers from the Armed Forces, 1964-1972	26
VI.	Source of Principal Training of Newly Hired Airline Flight Officers in Responding Air Carriers, 1963, 1960, and 1955	28

TABLE PAGE

VII. Source of Principal Training of Air Carrier Flight Officers, 1964 . . .

VIII. Total Active Certificated Pilots, 1955-1965. 32

IX. Number of Active Commercial Pilot Certificates Held for Calendar Years 1954, 1958, 1961, 1962, 1963. . . . 33

X. Number of Active Airline Transport Ratings Held for Calendar Years 1954, 1958, 1961, 1963. 34

XI. Officer's Monthly Basic Pay Rates . . 37

XII. Officer's Monthly Hazard Pay Rates . 38

XIII. Monthly Quarters Allowance. 39

XIV. Basic Allowance for Subsistence . . . 39

XV. Pay Scales for United Air Lines Flight Officers. 48-49

XVI. Estimated Monthly Salary During First Six Years of Employment—United Air Lines Second Pilot. 50

XVII. Retired Pay for Military Officers. . . 53

TABLE PAGE

XVIII. Example of a Recent Airline Captain Retirement. 56

XIX. Widow's Indemnity Compensation rates: Commissioned Officers 58

XX. Department of Defense Military Officer's Pay and Benefit Projection, Fiscal Year 1966 61-62

XXI. Compensation Comparison Summary: Military vs. Airline 72-72A

CHAPTER I

STATEMENT OF THE PROBLEM

CHAPTER I

STATEMENT OF THE PROBLEM

Introduction. Since the day in 1908 when, on the parade ground at Fort Myer, Virginia, a group of Army and Navy officers gathered to witness the tests of the Wright's airplane in an evaluation for military purposes, the armed services have developed the most powerful and versatile weapon in our nation's arsenal—that of air power. Although the plane crashed, injuring the pilot, Orville Wright, and killing the passenger, 1st Lieutenant Tom Selfridge, the flight marked the birth of military aviation in the United States. The core of this air power today is the 100,000 man group of highly skilled specialists who fly its aircraft.

The extremely complex weapons systems which have evolved from the tremendous technological advancements in aero-space over this past half-century have placed additional demands on the officers who pilot these machines. Not only in the traditional qualities expected of an officer but in new qualities demanded of him as a result of these technical advances. Vast sums of money are spent in

recruiting, selecting, and training men possessing the required qualifications and it is in our nation's best security interest that a maximum number of these high caliber individuals be retained on a career basis in the aviation components of the armed services.

The problem. There is little agreement among researchers on the premise that money is a prime factor for a military officer in deciding whether or not he should be a career officer as he reaches that point of completing his initial tour of obligated service. On the other hand, there is hardly any disagreement that money is an important factor, the relative importance being the utility of pay to a particular individual.[1] Few disagree that the compensation of a military pilot should compare in at least a generally favorable way with what he might receive for the use of his special skills in a comparable civilian industry.[2]

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[1]T. O. Nutt, The Utility of Pay to a Naval Officer (unpublished Master's thesis, George Washington University, 1963), p. 148.

[2]James E. Kneale, A Comparison of the Compensation Provided an Officer of the U.S. Navy with that Provided Management Employees in Industry (unpublished Master's thesis, U.S. Naval Postgraduate School, 1962, p. 2.

The most logical and practical use of his specialized training and experience would be as a commercial pilot for one of the nation's or the world's many airlines. What are the opportunities for employment with an airline for an experienced military pilot? How does the compensation of a military pilot compare with that of his contemporary who flies as an airline pilot in commercial aviation?

Purpose. The purpose of this paper is to make an objective examination of a specific occupational alternative for a group of men with a specific occupational skill. This examination will include employment opportunity for military aviators in commercial aviation as well as a comparison of the monetary compensation provided to each group. These considerations have been debated by military pilots the world over for many years whenever they meet to hold their traditional "happy hour". The resultant debate is often heated although generally inconclusive. The writer hopes that the information presented in this study will clarify much of the misinformation surrounding comparisons of monetary compensation received by the military pilot and the compensation received by commercial airline pilots as well as the status and trend of pilot

manpower requirements of the airlines in the United States.

Assumptions. While the airline promotion system is based entirely on seniority and failure to be promoted is unusual, the military services promote pilots based on the "best qualified" criteria with a semi-fixed or built-in attrition system which of itself varies from service to service. In order to minimize or as nearly as possible to equalize the effects of these different promotion systems, the writer has elected to create a composite military pilot and to view the occupational and compensation comparisons from his standpoint.

As the choice of staying in the service or seeking civilian employment is made by each military pilot when he completes his initial period of obligated services after flight training, it is this particular period in time in the career of the military pilot from which this composite person has been drawn. This composite military pilot has five years professional flying experience, is a reserve officer, and has been commissioned for over four years. He is serving in the grade of Captain (Navy Lieutenant) and earns over $10,500 per year. He has more than

three years of college education, and is married and has two children. If he stays in the military he can expect an opportunity of one chance out of five of being selected for a regular commission and an 80 per cent chance of being promoted in his next two grades. He will retire at age 43 as a Lieutenant Colonel (Navy Commander) with 20 years of commissioned service having been "passed over" for selection to higher rank.

The often stated argument in congressional hearings on military pay that special consideration is not given to the military man in recognition of the many inconveniences and interruptions to his home and family life is not examined in this study as it is believed that the "typical" airline pilot spends as much time "on the road" away from his home domocile as does the "typical" military pilot. While the airline pilot is normally away from home for relatively shorter periods no attempt will be made to equate the two.

Another often objected to particular of military life is that men are required to work odd hours, nights, weekends, holidays and at other times not of their own choosing. This occupational fact-of-life is also present

in the working hours of airline pilots who are, if anything, more likely to be scheduled at night, a weekend or on a holiday as the transportation needs and traveling habits of the public require.

Social Security benefits and contributions are equal for both groups and are therefor ignored.

Limitations. The pay and allowances of a military pilot officer are a matter of public law and record. On the other hand, the compensation and working conditions of an airline pilot vary slightly from company to company depending upon the results of contract negotiations between the individual airline and the Air Line Pilots Association (ALPA), which represents the pilots of virtually all the major scheduled air carriers in the United States.

The selection of United Air Lines as the industry representative for the study included the following criteria:

1. It employes the largest number of commercial pilots of any airline in the United States; 2. Its relative size, value of assets, and overall importance to the civil aviation industry; 3. It's working agreement with the Air Lines Pilots Association (ALPA) is regarded as one of the most

comprehensive in the industry and is expected to be a model for future negotiations between ALPA and competitor airlines.[1]

Due to the similarity of ALPA negotiated contracts with the various companies of the industry, it is considered that the use of only one company, United Air Lines, in no way detracts from the academic or practical value of the study.

Summary. The growing complexities of modern day air power require that tens of thousands of highly proficient pilots be recruited, trained, and maintained in an active status by our armed forces. William R. Kintner suggests that "perhaps the most vital element in a defense organization is the manpower within it...the national security depends ultimately upon the quality, motivation, and morale of the...military personnel who wield the nation's sword."[2]

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[1]Lyle D. Knoll, Chairman, United Airlines Negotiating Committee, Air Line Pilots Association (A.F.ofL.C.-I.O.), Letter to all United Airline Pilots Concerning Conclusion of Negotiations for Company Work Agreement, January 22, 1965.

[2]William R. Kitner, Forging a New Sword (New York: Harper and Brothers, 1958), p. 21-22.

The young military pilot coming to the end of his initial period of obligated service is faced with an interesting choice if he desires to continue to use his acquired high level of training and skill in an aviation career. An important factor of this choice is monetary compensation.

The remaining chapters will make a comparison of what this officer could expect to earn in the military and what he could expect to earn as a pilot in civil aviation. They will also examine what job opportunities and promotion rates he could expect with the latter career. The conclusions of the writer will be summarized in Chapter III.

CHAPTER II

THE STUDY (PART ONE)

COMMERCIAL AVIATION MANPOWER REQUIREMENTS

CHAPTER II

THE STUDY

I. COMMERCIAL AVIATION MANPOWER REQUIREMENTS.

Background. Commercial aviation is today seen by many writers as being on the brink of a problem which persons with knowledge of the industry have, since World War II, said would never happen. The problem: a shortage of trained pilots that is predicted to reach worrisome proportions in ten to fifteen years and become acute thereafter. The surplus of pilots who often sought in vain for aviation employment at the close of World War II and the Korean conflict, and the unstable and sometimes widely fluctuating job market during the past years, has created an atmosphere that made aviation seem an unattractive choice to many young people seeking a stable, secure career. Consequently, enrollment in aviation courses has dwindled over the years, and the number of schools offering aviation training is slowly decreasing.[1]

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[1]Robert Lindsey, "Our Space Age: Jobs Begging at $35,000 Per Year", San Jose Mercury News, January 10, 1965, p. 16.

Aviation technology is at the edge of significant advancements in many areas. Intercontinental supersonic aircraft, and smaller, economical local service trasports, will open great new passenger markets and increase the number of aircraft in commercial service. New general aviation aircraft will enter the inventory in a steadily increasing stream. Each will expand the industry's already growing requirements for highly skilled technicians, mechanics, and pilots. Each new type aircraft will require an even greater degree of high skill, training and technical knowledge.[1] In this regard there is a serious impending imbalance with respect to the demand and supply of flight officer personnel in commercial aviation as a consequence of the growth of the industry; heavy prospective losses due to the aging of the presently employed personnel and resource; and decreased inflows of trained pilots as the scale of military training changes.[2]

The problem. The aviation industry as well as the

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[1] "Pilot Shortage", Time, June 26, 1964, p. 80.

[2] Ibid.

federal government are currently engaged in high level studies to look into aviation's present and projected manpower resources and develop a basic course of action to offset a downward trend in available aviation skills with respect to future manpower needs. While the demand for pilots will steadily increase over the years ahead, there is little doubt that the supply will be decreasing. In the past, the airlines have drawn their personnel from two principal sources: the military services and private flying schools. According to Aviation Week and Space Technology, "Present trends clearly indicate that these two sources are rapidly drying up to the point where they cannot be counted on in the future to provide adequately trained personnel in sufficient quantity to meet the anticipated demand."[1]

Far from being a source of supply, the outlook is that the military services will actually be in competition with the airlines for what prospective pilots there are available. The majority of the Air Force and Navy pilots

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[1] James R. Ashlock, "FAA Leads Search for Solution to Civil Air Manpower Shortage", Aviation Week and Space Technology, October 12, 1964, p. 37.

trained are staying in the service and only a national emergency requiring the training of thousands will create a surplus. The Air Force says that it has a 9,500 pilot shortage now in the 23-30 age group which represents 50 per cent of the required number.[1] In January 1965 the Bureau of Naval Personnel indicated that the Navy has 2,300 pilot billets that it was unable to fill with the required ranks of Ensign, Lieutenant junior grade and Lieutenant.[2] By way of comparison, the Navy and Marine Corps only expect to produce a total of 1,700 new pilots during fiscal year 1965.[3]

Manpower requirements. In 1963 the scheduled airlines carried over 71 million passengers. This was an increase of almost nine million passengers in one year. As individual incomes increase or fares decrease, more people will be

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[1] "The Pilot Shortage: How Do We Solve It?", The Air Line Pilot, May, 1964, pp. 8-9.

[2] Department of the Navy, Bureau of Naval Personnel, "Shortage of Junior Pilots", The Officer Personnel Newsletter, January, 1965, p. 11.

[3] Department of the Navy, Office of the Comptroller, Budget Digest, Fiscal Year 1965 (Washington: Government Printing Office, 1964), pp. 57-58.

traveling by air. This together with the present generation of air-minded citizens coming of age and entering business, creates a tremendous new untapped reservoir of potential travelers. These will combine to create a need for more routes, more schedules, more equipment, and consequently, more flight and ground support personnel.[1]

Barring unpredictables such as war and other cataclysmic events, economic studies predict relatively higher levels of economic activity and full employment of the highly skilled. Following "historical" trends it is estimated that the gross national product will increase by more than 50 per cent in the decade between 1960 and 1970--the average rate of growth since 1960 has been established at 4.5 per cent per annum.[2] The transportation sector is expected to grow by 30 per cent. Economists predict that air transportation will account

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[1]Federal Aviation Agency, Report of the Aviation Human Resources Study Board On Manpower Requirements of the Civil Aviation Industry (Washington: Government Printing Office, 1964), p. 38

[2]Ibid.

for 14 per cent of the national transportation income by 1970, as contrasted with about seven per cent in 1960.[1]

Twenty-seven airlines (25 scheduled air carriers and two supplementals) representing 86 per cent of the pilot employment in the air carrier industry, contributed information on their present and future manpower requirements to the Federal Aviation Agency for a 1964 study, "Project Longlook". On the basis of these data, 226 flight officers were needed by the air carriers to fill the vacancies created by retirements alone in 1964. The annual requirement is expected to increase to 1,177 flight officers by the year 1980. Another 400 will be needed annually (beginning in 1965) to support the airlines' own estimates for expansion for 1965-80.[2] In order to better appraise the information furnished, it should be noted that the responding airlines hired 329 pilots in 1960 and 764 in 1963. Their estimates for 1964 were in excess of 1,500. In 1965 and 1966 they drop to about 1,030 and 850 respectively. For the following decade they furnished three

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[1] "Flying Cash Registers", Time, April 16, 1965, p. 85.

[2] Federal Aviation Agency, op. cit., p. 37.

figures: 1,080 in 1970; 1,420 in 1975; and 2,065 in 1980.[1]

A pamphlet received by the writer from United Air Lines in April 1965 indicated that this one airline's recruiting program calls for employment of 20 to 30 new second officers a month for an indefinite period into the future.[2]

The air carriers estimate they will require approximately 400 flight officers annually between 1964 and 1980 to satisfy personnel requirements created by growth alone. This is in addition to pilot requirements for losses due to attrition.[3] The rate of hiring of pilots by the airlines in 1964 ran below the number of younger pilots (below 35) being released by the Armed Forces.[4] This relationship is likely to continue even though the gap may narrow. However, it must be borne in mind that only a small percentage of the military trained pilots separating from the services in the under-thirty-five-years of age group

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[1] Ibid.

[2] United Air Lines Personnel Recruiting Pamphlet, Flight Officer, 1965.

[3] Federal Aviation Agency, loc. cit.

[4] Ibid., p. 47.

apply for or are apparently interested in pursuing a career as a professional pilot in any segment of aviation.[1]

Forecasts, therefore which show no projected growth in flight officers during the next decade do not take into consideration the still growing demand for air transportation. In addition to the long-haul market which will be served by supersonic aircraft, there exists the large, untapped demand for short-haul air transportation. This demand will be of very sizable proportions as soon as satisfactory equipment is designed and manufactured to meet the economic demand in the less-than-500-mile-range transport category.[2]

The increased productivity of aircraft undoubtedly tends to reduce manpower needs on a seat-mile or ton-mile basis. However, three trends which run counter to this tendency are:

a. Hours of Work. Historically, there has been a decrease in the number of hours worked by skilled personnel. For example, the 85 hours per month maximum

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[1] Ibid., p. 45.

[2] Ibid., p. 39.

flown by flight personnel has been reduced by some carriers to 75. Vacations have become longer. Days off and sick leave allowances have increased and a general reduction of the number of hours worked has been experienced mostly through union negotiations. This trend of course will tend to increase the number of flight personnel needed in the future.

b. Earlier Retirements. Another trend which should be noted is a reduction in retirement age. Presently, the flight officer group has a mandatory retirement age of 60. Just as there have been reductions in hours of work, the possibility of shortening the working life of pilots by earlier retirements should be considered--for it too has a definite bearing upon future manpower needs. Earlier retirements may be voluntary (due to increased prosperity) or mandatory (due to regulations, unions, or company policy).

c. Training time and costs. As aircraft become more complicated, an increased need for training of personnel is anticipated. This will involve increased time and cost. Present training of flight crews for jet aircraft is costly because the operational costs of these aircraft can range anywhere from several hundreds of

Table I--Estimated Losses of Flight Officers From the Certificated Trunk and Local Service Airlines, by Reason, 1964 to 1980

Year	Assuming compulsory retirement at age 60			
	Total	Retirements	Medical	Promotions
1964	226	86	65	75
1965	252	100	77	75
1966	276	111	90	75
1967	293	118	100	75
1968	349	165	109	75
1969	356	163	118	75
1970	404	208	121	75
1971	438	237	126	75
1972	443	240	128	75
1973	435	329	131	75
1974	574	365	134	75
1975	645	435	135	75
1976	732	519	138	75
1977	946	739	132	75
1978	754	547	132	75
1979	1,056	857	124	75
1980	1,177	988	114	75

Source: Estimated on the basis of data from questionnaire; adjusted to include an estimate for nonreporting airlines; Federal Aviation Agency.

dollars to over a thousand dollars per hour. The supersonic aircraft will involve even higher costs. It will involve greater numbers of people and thereby reduce the number of on-the-job productive hours of pilots.

Future losses from civilian aviation. Table I provides estimates of future losses of flight officers from the scheduled airlines as a result of age and factors associated with age. The estimates assume the continuance of mandatory retirement at age 60. The estimates assume that certain fixed losses occur because of promotion, but losses or transfers for medical reasons are related to the age distribution of the work force (see Table II, III and IV).

If the compulsory retirement age remains at 60, retirements and related losses will increase steadily to a peak of about 1,200 a year in 1980. Estimates are not available for after 1980. If there should be a shift to compulsory or optional retirement prior to age 60, the peak of losses would occur a few years earlier, thus increasing the level of retirements in the interim years. There would also be a temporary increase in retirements during any transition period during which new retirement rules were being implemented.

Table II

AGE DISTRIBUTION OF PILOTS,
BY TYPE OF EMPLOYER, 1964.

Age group	Trunk and local airlines	Federal Governments	State Governments	Fixed Base General Aviation	Business General Aviation
55 and over. . .	3.5	8.8	3.3	2.6	0.6
50-54.	6.9	9.9	6.6	6.6	6.1
45-49.	16.5	27.9	18.7	9.7	16.9
40-44.	28.8	37.8	26.2	20.0	29.5
35-39.	19.2	10.0	21.1	19.4	19.2
30-34.	17.9	4.7	14.5	18.8	16.8
Under 30	7.2	.9	9.6	22.9	10.9
Total. . . .	100.0	100.0	100.0	100.0	100.0
Number in sample	[1]16,148	[2]1,634	[3]332	[4]1,390	[4]661
Median age . . .	40.0	45.5	40.9	37.1	40.5

[1]Does not include nonreporting airlines.

[2]Does not include Defense Department.

[3]Does not include five states.

[4]Quite small and perhaps not a representative sample.

Data was collected from a special questionnaire.

Source: Federal Aviation Agency.

Table III

Age Distribution of Flight Officers in Trunk and Local Service Airlines, 1964[1]

	Trunk	Local	Total
55 and above	549	12	561
54	149	1	150
53	185	6	191
52	219	5	224
51	223	7	230
50	307	11	318
49	338	19	357
48	406	25	431
47	462	30	492
46	713	40	753
45	599	30	629
44	888	60	948
43	999	64	1,063
42	813	71	884
41	789	83	872
40	801	81	882
35-39	2,776	328	3,104
30-34	2,469	430	2,899
29 and under	899	261	1,160
Total	14,584	1,564	16,148
Median Age	41.6	36.8	40.0

[1]Figures represent 86% of estimated total air carrier employment. Totals do not include employment by nonreporting airlines.

Source: Special questionnaire; Federal Aviation Agency.

Table IV--Estimated Age Distribution of Original License Issuances, 1963

Age group	Student	Private	Commerical	ATR
16-19.....	4,148	84	.....	.....
20-24.....	15,209	1,268	132	.....
25-29.....	13,826	2,198	691	15
30-34.....	11,752	3,170	1,243	83
35-39.....	10,370	4,480	917	162
40-44.....	6,913	3,952	1,714	351
45-49.....	3,456	2,684	961	247
50-54.....	2,074	1,712	358	95
55-59.....	691	930	169	45
60 and over..	691	655	94	12
Total....	69,130	21,133	6,279	1,010

Source: Federal Aviation Agency

The Federal Aviation Agency places a great deal of confidence in the data it receives from the airlines. The airlines are regarded as a highly organized and fairly stable industry with young pilots entering as third officers or copilots, steadily progressing through seniority to captain, and finally retiring.[1]

Since the airlines probably represent over one-third of all professional pilot employment, and assuming that the age patterns in the entire industry are not too dissimilar, the retirement of pilots from government and general aviation will increase from about 400 in 1964 to a peak of perhaps 2,100 in 1980. If retirement ages in these fields drop, the peak will come earlier,[2] but it will be about the same level.

The estimates do not take into account losses from pilots leaving the airlines or aviation industry. Losses by particular employers are counterbalanced to some extent by their hiring pilots who have left other employers reflecting simple turnover within the industry.

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[1] Ibid., p. 90.

[2] Ibid.

Losses from the armed forces to civilian life.

Table V presents data on expected future losses of pilots from the Armed Forces who upon their return to civilian life become potentially available to civilian aviation as pilots. These losses are presented in two groups: those separated who are generally between 27 and 34 years of age; and the retired, who are generally between 43 and 48 years. These figures have been adjusted by the services to exclude those who will be disabled upon leaving the service. The Air Force and Navy figures go only until 1972. In general, losses of pilots from the Armed Forces will tend to decline over the next decade expecially for those who are in the younger ages (under 35); losses will tend to increase slowly in the case of pilots who are in the older age groups (40 and over).

Current pilot losses from the Armed Forces to civilian life exceed the current replacement needs of the airlines. Last year (1964) the airlines were expected to lose about 225 flight officers because of retirement, disability, and promotion. Pilot losses from the rest of civil aviation for the same reasons will be about 400. This compares with estimated losses from the Armed

Table V

Projected Losses of Flight Officers from the Armed Forces, 1964-1972.

Year	Separated[1]	Retired[1]
1964	3,980	1,700
1965	4,000	1,710
1966	3,430	1,600
1967	3,970	1,770
1968	3,520	1,840
1969	3,320	1,870
1970	2,490	2,070
1971	2,340	2,010
1972	2,030	1,880

[1]Excludes the disabled.

Source: Estimated on the basis of total projected losses from the U. S. Air Force, Navy, Army, Marine Corps, and Coast Guard; compiled by the Federal Aviation Agency.

Forces of over 3,900 relatively young and about 1,700 middle aged, able pilots.[1]

There is a great gap between the outflow of trained, able pilots from the Armed Forces and their employment as civilian pilots. The data suggest that all airlines combined hired less than 500 military trained pilots in 1963 and less than 350 in 1960 (see Table VI and VII).

Further evidence along these lines is provided by the United States Air Force Reserve Records Center which reported to the FAA that in 1963 only 4.5 per cent of all rated pilots in the USAF Reserve listed their current primary civilian occupation as "commercial pilot".[2]

Because of their hiring and seniority practices, the air carriers are particularly interested in younger pilots. There is no reason for the carriers to hire middle-aged pilots for this would amoung other difficulties compound their retirement peak in 1975-80. However, the air carriers may be interested in middle-aged military pilots

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[1] Ibid., p. 92.

[2] News item in Aviation Daily, October 1, 1964, pp. 181-182.

TABLE VI

Source of Principal Training of Newly Hired Airline Flight Officers in Responding Air Carriers, 1963, 1960, and 1955.

Year	Military	Civilian	Total
1963	416	519	935
1960	242	137	379
1955	673	373	1,046
	Percent distribution		
1963	44.5	55.5	100.0
1960	63.9	36.1	100.0
1955	64.3	35.7	100.0

Source: Federal Aviation Agency

Table VII

SOURCE OF PRINCIPAL TRAINING OF AIR CARRIER FLIGHT OFFICERS, 1964.

	Military	Civilian	Total
	Number		
Captain/pilot	2,941	2,802	5,743
First officer/copilot	3,186	1,725	4,911
Second officer/flight engineer	2,862	1,840	4,702
Total	8,989	6,367	[1]15,356
	Percentage distribution		
Captain/pilot	51.2	48.8	100.0
First officer/copilot	64.9	35.1	100.0
Second officer/flight engineer	60.9	39.1	100.0
	58.5	41.5	100.0

[1]Does not include projection for nonreporting airlines or 792 flight officers who were in overall sample but for whom training data were not reported.

Source: Federal Aviation Agency.

some years hence.

One crucial question has not, however, been dealt with. To what extent can civil aviation attract former military pilots? The answer involves beginning pay scales, promotion opportunities, working conditions, and other personal considerations. Current practices in the airlines do not permit them to discriminate in pay or promotion in favor of military trained pilots, even if they have ten times as much experience. This represents a serious obstacle to recruiting ex-military pilots.[1]

Another crucial question relates to the future training policies and retention experience of the Armed Forces. Any increase in their level of training will be reflected in higher losses to civilian life six or more years later, as pilots finish their obligated tours of duty. Within limits, a cutback in the number of active duty pilots in the services would tend to temporarily increase the number of pilots returning to civilian life. However, this would be counterbalanced by paralled reductions in

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[1]Randolph Hawthorne, "The Pilot Shortage: Fact or Farce?", Flying, January, 1965, pp. 26-29.

training programs and hence, lead to lower separations in the future. Retention rates may also increase among young pilots as the number of retirements increases, opening up opportunities for promotion.

Retention rates may also increase if there is any tendency to expand the military aviation structure. In either case--higher retirements or an increase in pilot strength--the level of military training programs may have to increase. This would normally lead to increased losses of young pilots to civilian life a few years later. As future training policies are likely to be at least as obscure as is the international situation on which they are ultimately based, the writer would care to venture no prediction as to what they might be in the future.

A more comprehensive investigation of the aviation manpower area would have to take into consideration such additional factors as turnover losses to the industry and prospective changes in utilization practices. But it is not likely that such additional data would greatly alter the conclusions summarized in the following chapter.

Table VIII

TOTAL ACTIVE CERTIFICATED PILOTS, 1955-1965.

Type	1955	1965	% change
Airline transport	12,129	20,269	+67
Commercial	80,346	96,341	+20
Private	184,595	152,209	-18
Students	71,969	105,298	+46
Helicopter (only)	52	823	+1,483
Glider (only)	534	1,045	+96

Source: Federal Aviation Agency

Table IX--Number of Active Commercial Pilot Certificates Held for Calendar Years 1954, 1958, 1961, 1962, 1963

Age group	1954		1958		1961		1962		1963	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	80,347	100.0	93,126	100.0	92,976	100.0	96,047	100.0	96,341	100.0
16-19	80	0.1	36	([1])	186	0.2	148	0.2	31	([1])
20-24	3,561	4.4	3,296	3.5	4,370	4.7	3,410	3.5	1,983	2.1
25-29	12,995	16.2	22,598	24.3	17,758	19.1	14,948	15.6	10,566	11.0
30-34	31,485	39.2	15,077	16.2	15,341	16.5	17,773	18.5	19,083	19.8
35-39	17,473	21.7	25,966	27.9	20.734	22.3	18,282	19.0	14,111	14.6
40-44	7,706	9.6	14,618	15.7	21,105	22.7	24,090	25.1	26,303	27.3
45-49	4,251	5.3	6,226	6.7	7,996	8.6	10,427	10.9	14,745	15.3
50-54	1,810	2.3	3,238	3.5	3,254	3.5	4,069	4.2	5,485	5.7
55-59	727	.9	1,349	1.4	1,488	1.6	1,931	2.0	2,598	2.7
60 and over	259	.3	722	.8	744	.8	969	1.0	1,436	1.5

[1]Less than 0.05 percent.

Source: Federal Aviation Agency

Table X--Number of Active Airline Transport Ratings Held for Calendar Years 1954, 1958, 1961, 1962, 1963

Age group	1954		1958		1961		1962		1963	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total. . . .	12,129	100.0	15,840	100.0	19,155	100.0	20,032	100.0	20,269	100.0
16-19.	1	([1])	.....	.....	.....	.....	.....	.....	.....	.....
20-24.	11	0.1	3	(1)	38	0.2	31	0.2	7	([1])
25-29.	375	3.1	282	1.8	670	3.5	568	2.8	293	1.5
30-34.	3,888	32.1	1,637	10.3	2,299	12.0	2,302	11.5	1,660	8.2
35-39.	4,274	35.2	5,912	37.3	4,846	25.3	4,222	21.1	3,232	16.0
40-44.	2,013	16.6	4,698	29.7	6,628	34.6	7,247	36.2	7,039	34.7
45-49.	1,111	9.2	1,145	12.3	2,835	14.8	3,494	17.4	4,969	24.5
50-54.	308	2.5	1,006	6.4	1,303	6.8	1,450	7.2	1,907	9.4
55-59.	121	1.0	254	1.6	421	2.2	573	2.9	920	4.5
60 and over. .	27	.2	103	.6	115	.6	145	.7	242	1.2

[1]Less than 0.05 percent.

Source: Federal Aviation Agency.

CHAPTER II

THE STUDY (PART TWO)

COMPENSATION COMPARISON

CHAPTER II

THE STUDY (PART TWO)

II. COMPENSATION COMPARISON

Basic salary and allowances: military. The military pilot officer receives a basic pay as well as a basic allowance for subsistence, quarters allowance, and hazardous duty pay. The current pay rates are authorized by Public Law 422, 88th Congress, approved August 12, 1964, and September 1, 1964. No consideration will be given to the present military pay bill now in committee in the Congress which propose a military pay increase of approximately three to eight per cent depending upon pay grade and longivety. The allowances for quarters and subsistance are not included in computing taxable income according to law which has the effect of increasing these allowances over the stated amount by approximately 25 per cent.

Several of the pay increments authorized by law have been deleted from the tables shown for reasons of brevity and readability and because their exclusion would not detract from the objectives of the study. Specifi-

Table XI

OFFICERS MONTHLY BASIC PAY RATES[1]

Pay grade	Over 2	Over 4	Over 6	Over 8	Over 10	Over 12	Over 16	Over 18
O-10	$1,347	$1,347	$1,347	$1,399	$1,399	$1,506	$1,614	$1,614
O-9	1,183	1,209	1,209	1,240	1,240	1,291	1,399	1,399
O-8	1,076	1,101	1,101	1,183	1,183	1,240	1,291	1,347
O-7	927	927	968	968	1,025	1,025	1,183	1,266
O-6	707	753	753	753	753	753	902	948
O-5	604	645	645	645	666	702	804	850
O-4	528	563	573	599	640	676	738	758
O-3	450	533	558	579	609	640		
O-2	384	476	486					
O-1	307	2						

[1]Authorized by Public Law 422, 88th Congress, effective September 1, 1964.

[2]Where a blank is shown, the last figure to the left applies.

Source: Army Times Publishing Company.

Table XII

OFFICER'S MONTHLY HAZARD PAY RATES[1]

Pay grade	Over 2	Over 4	Over 6	Over 8	Over 10	Over 12	Over 16	Over 18
O-10	$165	$165	$165	$165	$165	$165	$165	$165
O-9	165	165	165	165	165	165	165	165
O-8	155	165	165	165	165	165	165	165
O-7	150	160	160	160	160	160	160	160
O-6	200	215	215	215	215	215	220	245
O-5	190	205	205	205	205	210	230	245
O-4	170	185	185	195	210	215	230	240
O-3	145	165	180	185	190	200	205	205
O-2	125	150	160	165	170	180	185	185
O-1	105	135	140	145	155	160	170	170

[1] Authorized by Public Law 422, 88th Congress, effective September 1, 1964.

Source: Army Times Publishing Company.

Table XIII

MONTHLY QUARTERS ALLOWANCES

Pay Grade	Without dependents	With dependents
O-10	$160.20	$201.00
O-9	160.20	201.00
O-8	160.20	201.00
O-7	160.20	201.00
O-6	140.10	170.00
O-5	130.20	157.50
O-4	120.00	145.05
O-3	105.00	130.05
O-2	95.10	120.00
O-1	85.20	110.10

Source: Army Times Publishing Company.

Table XIV

BASIC ALLOWANCE FOR SUBSISTENCE

Officers (commissioned and warrant)
and aviation cadets . . . . . $47.88 per month

Source: Army Times Publishing Company.

cally the categories under two, over three, over 14, and all increments over 20 years were deleted.

In addition to the compensation shown in the tables it should be noted that other special pays exist for special circumstances. Hostile Fire Pay is $55.00 monthly for officers. Officers who hold assignments of "unusual responsibility and of a critical nature" to the services may receive Responsibility Pay on the following scale: Captain and Major (or equivalent), $50.00; Lieutenant Colonel, $100.00; and Colonel, $150.00. The authority is permissive.[1]

The Family Seperation Allowance amounts to $30.00 a month for officers whose assignments separate them from their families. In certain instances, additional quarters allowance may be authorized for those who maintain two households-overseas and stateside. Officers may receive up to $16.00 per diem while on temporary assignments away from their permanent duty station. The effect of these special pays is not considered in the over-

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[1] "Armed Forces Ranks, Pay and Allowances", Army Times Reports (Washington: Army Times Publishing Company, 1964), p. 2.

all comparison due to the relatively limited number of officers receiving the pay, the limited period for which it is received, or that it is to reimburse out-of-pocket expences for which the airlines have comparable provisions.

It should also be pointed out that the Hazardous Duty Pay for flying officers reaches a maximum of $245.00 per month for senior colonels and levels out in grade or is reduced with further promotion to $165.00. This is presumably due to the small probability that more senior officers would be assigned to continuous flying or to operational missions.

Salary and allowances: airlines. The pay scales for flight officers employed by United Air Lines appear in Tables XV and XVI. The advancement of a flight officer with United Air Lines is based solely on seniority in terms of the company's agreement with the Air Line Pilots Association. All new flight officers with United start as Second Officer, advance to the position of First Officer, and then to Captain. Also, the time to advance to the higher positions varies depending on an individual's selection of domicile, type of equipment, and schedules. The average individual could expect to advance to First Officer in eight

to nine years and then to advance to Captain in a comparable period of time.[1]

United Air Lines is presently using the DC-8 as their long-range equipment; the Boeing 720 and 727 for intermediate ranges, and the DC-6, Convair 340, Viscount, and the Caravelle as short-range airplanes. In April, 1965, United negotiated a large purchase of additional equipment. By 1970 the Boeing 737 short-range jet will replace United's piston powered Convairs, the DC-6, and the few turbo-prop powered Viscounts which are operated from the East Coast. Additional 727 aircraft for medium-range operations and DC-8 aircraft for long-range operations have also been procured.[2] This obviously sets the pattern for United Air Lines' equipment purchases into the early 1970's. Beyond this period they are looking forward to the development of supersonic transports for the long range market a decade or so in the future.

The latest work contract provides for an initial pay

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[1]R. W. Edmonson, United Air Lines Employment Representative, Western Region, Letter to Lieutenant Commander Maynard L. Howard, April 6, 1965.

[2]Ibid.

of $6,000.00 per year. Afther the first year, pay is predicated on flying hours within an 81 hour minimum agreed to by the company and an 85 hour monthly maximum established by the Federal Aviation Agency. Variations include pay by hour, day/night differential, speed differential, and gross weight differential.[1] A 727 Second Officer with six years of service flying half day and half night could expect to receive approximately $16,000.00 annually. First Officer pay would range upward from this point to the range of $20,000.00 to $25,000.00. The average Captain flying the same schedule outlined for the Second Officer would be in a pay range of $28,000.00 to $30,000.00 per year. Captain pay scales range from about $25,000.00 for a Convair (prop) Captain to about $33,000.00 for a very senior DC-8 (jet) Captain.[2]

All advancement is solely on the basis of seniority. Flight Officers bid for upgrading to heavy and faster equipment, for the position of First Officer and Captain, for the domicile selected, and for the particular runs

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[1]United Air Lines Personnel Recruiting Pamphlet, Flight Officer, 1965, p. 2.

[2]Edmonson, loc. cit.

chosen by any individual.

Contract provisions: airlines. In order to assist the reader in understanding and interpreting the airline pay scales, some provisions of the negotiated working contract between the Air Line Pilots Association and the airline should be considered. The current contract was negotiated January 18, 1965 and is effective until January 1, 1967. All provisions mentioned in this study are currently effective unless another effective date is indicated.

Equipment is combined for pay purposes in the following manner: all DC-8 and B-720 flying is paid at DC-8F rates, including gross weight and pegged speed; all Caravelle flying is paid for at Boeing 727 rates, including gross weight and pegged speed; all propeller flying is paid for at DC-6B rates, including gross weights and pegged speed. All night pay is based on local time at the home domicile.[1]

If after leaving his home domicile a pilot is removed from a trip sequence to which he was assigned in order to cover another trip, he receives pay and flight time credit for whichever of the two is greater. If it projects him

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[1]Knoll, op. cit., p. 2.

over eighty-five hours, additional trips are deleted to bring him below eighty-five hours and his schedule projection is restored.

Meal allowances which are paid by the company are as follows: lunch, $1.90; dinner, $3.85; breakfast, $1.60; and midnight snack, $1.50, for a total of $8.85 per day. A pilot receives $5.00 per day for extra expenses when he is on temporary duty away from his domicile.[1] The company pays for lodging expenses when the pilot is away from his home domicile.

Eighty-five hours of credited flying time constitutes the monthly maximum for pilots except when a runholder who is in a line for a full month is scheduled to fly a trip which would cause him to exceed 85 hours of credited time. Then he shall fly the trip provided he does not exceed 85 hours of actual flying time. All pay and flight time credit in excess of 85 hours is credited to the pilot and paid in any future month when the pilot's credited flying time falls below 85 hours. Such accumulated hours are paid at night rates regardless of the conditions in which they were

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[1] Ibid., p. 7.

flown.

A pilot, including a reserve pilot, who departs his home domicile is guaranteed a minimum of one hour pay and flight time credit for each two hours of duty time on a scheduled or actual basis. He is also guaranteed a minimum of one hour pay and flight time credit for each three and one-quarter hours time away from home. For each duty period, a pilot is guaranteed a minimum of four hours. As of January 1, 1966 this ratio will change to one hour pay and flight time credit for each one and three-quarters hours on duty, or one hour's pay and flight time credit for each three hours time away from home. All ratios are prorated on a minute for minute basis and the greater of the minimums applies.[1]

For scheduling purposes, a pilot may be scheduled for twelve and one half hours of duty on a turbine or 14 hours on a propeller, except any trip sequence which originates between 1800 and 0600 hours at the point of departure for the crew will be limited to ten hours of duty, unless broken by at least a five hour rest period.

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[1] Ibid., pp. 8-9.

Duty time is from one hour before departure until fifteen minutes after arrival. When a pilot is "deadheading", it does not include the one hour before departure or the 15 minutes debrief on arrival. Scheduled rest periods are eight hours for a field layover or nine hours if scheduled into one airport and out of another in the same metropolitan area. Ten hours are allowed for a hotel layover or at the home domicile.[1]

All reserve pilots are scheduled for a minimum of ten calendar days off per month. This is broken into one period of four calendar days and three periods of two calendar days. The four-day period is "untouchable" but a reserve may be assigned to a trip to prevent "junior manning". In this case another day is added to his two-day off period on his return.

The number of bid categories is nine. Status is defined as Captain, First Officer, and Second Officer. Equipment types are DC-8/Boeing 720, Boeing 727/ Caravelle, and propeller. Generally speaking, a pilot may always improve his status by going from Second Officer

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[1]Ibid.

Table XV (part 1): Pay Scales for United Air Lines Flight Officers based on half day, one half night rates.

SCHEDULE CAPTAINS

	Propeller	Caravelle Boeing-727	DC-8 Boeing-720
Eighty-five hours	$2,147.28	$2,458.00	$2,753.38
Retirement credit	166.98	209.97	236.55
Total	$2,314.26	$2,667.97	$2,989.93

RESERVE CAPTAINS

Eighty-one hours	$1,903.58	$2,358.80	$2,640.28
Retirement credit	160.07	201.04	226.38
Total	$2,063.65	$2,559.84	$2,866.66

12TH YEAR FIRST OFFICER

Eighty five hours	$1,426.02	$1,635.88	$1,816.08
Retirement credit	117.09	135.98	152.20
Total	$1,543.11	1,771.86	1,968.28

12TH YEAR RESERVE FIRST OFFICER

Eighty-one hours	$1,375.38	$1,575.37	$1,747.09
Retirement credit	112.53	130.53	145.99
Total	$1,487.91	$1,705.90	$1,893.08

9TH YEAR FIRST OFFICER

Eighty-five hours	$1,377.06	$1,572.64	$1,744.00
Retirement credit	112.69	130.29	145.71
Total	$1,489.75	$1,702.93	$1,889.71

9TH YEAR RESERVE FIRST OFFICER

Eighty-one hours	$1,328.72	$1,515.10	$1,678.40
Retirement credit	108.33	125.11	139.81
Total	$1,437.05	$1,640.21	$1,818.21

Table XV (part 2), Pay Scales for United Air Lines Flight Officers based on one-half day, one-half night rates.

12TH YEAR SECOND OFFICER

	Propeller	Caravelle Boeing-727	DC-8 Boeing-720
Eighty-five hours	$1,214.03	$1,382.92	$1,527.68
Retirement credit	98.01	113.21	126.24
Total	$1,312.04	$1,496.13	$1,653.92

12TH YEAR RESERVE SECOND OFFICER

Eighty-one hours	$1,173.37	$1,334.31	$1,472.26
Retirement credit	94.35	108.83	121.25
Total	$1,267.72	$1,443.14	$1,593.51

9TH YEAR SECOND OFFICER

Eighty-five hours	$1,165.15	$1,450.18	$1,479.57
Retirement credit	93.61	109.42	121.91
Total	$1,258.76	$1,559.60	$1,601.48

9TH YEAR RESERVE SECOND OFFICER

Eighty-one hours	$1,126.79	$1,294.14	$1,426.41
Retirement credit	90.16	105.22	117.13
Total	$1,216.95	$1,399.36	$1,543.54

Retirement credit represents 4.5% of the first $250 and 9% of the excess, it is paid by the company.

Source: Air Line Pilots Association.

Table XVI Estimated Monthly Salary During First Six Years of Employment--United Air Lines Second Pilot.

1st year	$500 monthly
2nd year	$735
3rd year	$925
4th year	$960
5th year	$1100
6th year	$1200

Note: Men employed without an instrument rating are paid $350 per month during the four weeks' preliminary training required to obtain this rating, after which their salary is increased to $500. This rate applies throughout the training required a Denver and for the first six months on the Line, after which it is increased to $525 for the second six months. After the first year, second officer's pay becomes a combination of base pay, hourly, mileage, and gross weight. The above estimates are based on a schedule of 80 hours a month half-day and half-night.

Source: United Air Lines.

to First Officer, and First Officer to Captain without restriction. He may always move from a lower equipment pay group to a higher equipment pay group but must remain in the new equipment for one year. He may bid any other vacancy in his status on any equipment at another domicile, but he must remain on that equipment for one year and cannot return to the original domicile for one year in the same or lower equipment pay group as he held at the time of the award.

A prop captain may bid turbine First Officer and a propeller First Officer may bid turbine Second Officer but it must be at another domicile, and he will be required to remain in that status and equipment for 18 months.

Pilots in a reserve status are guaranteed 81 hours flight credit for pay purposes whether they fly one hour or 81 hours.[1]

Retirement benefits: the military. The opportunity for relatively early retirement has always been regarded as one of the principal advantages of a military career.

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[1] Ibid.

Many of the officer reassignment policies as well as some of the larger pay increments during the first four years of service are designed to motivate the maximum number of officers towards extending their service tour once more and thereby tending to retaining as many as possible for a longer military career.

Each branch of the service has its own retirement plan. Regular officers and reserve officers are provided for under different laws. In addition to regular retirement there are provisions for disability retirements both temporary and permanent.

According to the Career Compensation Act of 1949, however, the rules for retirement are generally the same and the pay is identical for all the services. All the services provide for retirement after 20 years of service with the approval of the Secretary of the Department. Statutory retirement is at 26 years for a Commander, (Lieutenant Colonel), 31 years for a Captain, 35 years for a Rear Admiral or on reaching the age of 62 years.

Table XVII shows the amount of retirement pay for the normal voluntary retirement situation. Basically, it

Table XVII

RETIRED PAY FOR MILITARY OFFICERS

Rank/Pay Grade	Years Total Service and Percent of Base Pay										
	20	21	22	23	24	25	26	27	28	29	30
	50%	52½	55	57½	60	62½	65	67½	70	72½	75[1]
General/ADM/O-10	$861	$908	$950	$991	$1018	$1040	$1188	$1236	$1280	$1326	$1370
LGEN/VADM/O-9	754	791	829	865	905	941	980	1018	1058	1094	1130
MGEN/RADM/O-8	699	733	798	835	871	909	944	981	1017	1055	1089
BGEN/RADM/O-7	633	664	697	728	760	790	823	854	887	918	950
COL/CAPT/O-6	484	510	577	603	630	658	731	761	789	818	845
LCOL/CDR/O-5	438	460	498	521	543	567	589	611	634	658	680
MAJ/LCDR/O-4	379	397	417	436	454	474	492	511	531	550	569
CAPT/LT/O-3	333[2]	350	366	383	399	415	433	450	466	483	499
1LT/LTJG/O-2	282[2]	296	309	324	337	352	366	380	394	408	422
2LT/ENS/O-1	238[2]	251	262	274	286	298	309	321	333	246	358[3]

[1]Maximum Allowed is 75% of Base Pay.

[2]Pay Grades O-1,2 & 3 would require previous enlisted service in order to complete 20 years in these grades.

[3]Computions are by the writer based on the monthly Basic Pay data in Table XI.

consists of two and one half per cent times the base pay for the rank in which the officer is retired times the number of years service at the time of retirement. Retirement pay may in no case exceed 75 per cent of the pay at the time of retirement. Retirement pay is based only on the base pay and the Hazardous Duty pay and all allowances are excluded from its computation.

Retirement benefits: United Air Lines. Airline retirement income computation encompasses a large number of variables for flight officer personnel.

The elements of the United Air Line plan are these: It is a non-participating plan with the company paying all the costs. The income received at retirement is variable and is based on total earnings during the working years. It includes disability provisions (i.e., medical problems leading to a loss of pilot certification) providing a minimum of $400 per month after ten years to a maximum of $650 per month after twenty years under the disability provisions.[1]

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[1] R. W. Edmonson, Employment Representative, Western Region, United Air Lines, Letter to M. L. Howard, June 2, 1965.

Numerous options are available at retirement including straight annuity, ten-year guaranteed annuity, and designation of a contingent annuitant for a percentage of the employee's retired pay. A recent actual case is shown in Table XVII and is described by United Personnel representatives as being typical of an individual retiring now but that this will not hold true for the future since pilot incomes have increased greatly in recent years and retirement income is based on total earnings during the working years.[1] The mandatory retirement age for flight personnel is 60 years based on Federal Aviation Agency Regulations. The example in Table XVIII is based on a Captain born in 1910 who has a company seniority date of 1935, and shows just two of the possibilities available. Should he elect to retire in 1966 at age 56 he will receive $686 per month under the straight annuity provision. Should he elect to retire at the mandatory age of 60 in 1970 he will receive $1163 per month retirement pay under the same provision.[2]

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[1] Ibid.

[2] Ibid.

Table XVIII

EXAMPLE OF A RECENT AIRLINE CAPTAIN RETIREMENT: UNITED AIR LINES. (1965).

Retirement Age	Straight Annuity	Employee & Wife[1]	Widow[1]
56	$686	$564	$376
58	915	743	495
60	1163	934	623

[1]Contingent Annuitant designated to receive two-thirds of employee's income.
Note: Based on birthdate 1910; company seniority date 1935. The table shows only two of the possibilities available: Straight annuity and contingent annuitant.

Source: United Air Lines.

Benefits: military. An attempt to establish criteria for a comparison of "fringe" benefits between military officers and their contemporaries employed by commercial airline companies is to open a Pandora's box of ambiguities and inconsistencies. For the most part the traditional benefits of two decades ago which were so carefully guarded by the military and the Congress have since largely been equalized by developments in compensation practices in the civilian economy.

In general we may list two major categories of military "fringe" benefits: 1. The legal categories which consist of survivor benefits, disability benefits, the previously discussed retirement benefits, and the various veterans' benefits which include death gratuity, indemnity compensation, government job preference, burial in a national cemetery, etc.; 2. The second category includes the "traditional" benefits, although they are usually also founded in law. These are more difficult to quantify with a price tag and include post exchanges, commissaries, dependents medical care, entertainment and recreational facilities, etc.

The military officer has free dental, medical, and

Table XIX

WIDOW'S INDEMNITY COMPENSATION

RATES: COMMISSIONED OFFICERS[1]

Pay Grade	Over 2	Over 4	Over 8	Over 12	Over 16	Over 20
O-10	$282	$282	$288	$301	$314	$327
O-9	263	266	269	275	288	301
O-8	250	253	263	269	275	288
O-7	232	232	237	244	263	272
O-6	205	211	211	211	229	237
O-5	193	198	198	205	217	226
O-4	184	188	192	202	209	212
O-3	175	184	190	197	199	199
O-2	167	178	179	179	179	179
O-1	157	167	167	167	167	167

[1]Survivor Benefits Act, as amended by Public Law 134 and 422, 88th Congress.

Source: Army Times Publishing Company.

hospital care. His dependents in general are eligible only for free medical and hospital care.

The Survivor Benefits Act--as amended by Public Law 134, 88th Congress, effective October 1, 1963--provides that an unremarried widow whose husband dies as a result of service in the Armed Forces may receive Veterans' Administration dependency and indemnity compensation (DIC) at the monthly rate of $120, plus 12 per cent of the basic pay of the rank held at the time of the husband's death. DIC rates range upward from a minimum of $130 monthly to a maximum of $363 for the widow of a Chief of Staff.

The 1964 Uniformed Services Pay Act-- Public Law 422, 88th Congress, effective September 1, 1964--increased rates of basic pay. The Pay Act included a "savings" clause, which means that widows receiving higher "protected" rates after August 31, 1964 will not have their DIC reduced. Monthly DIC rates payable according to grade and length of service are shown in Table XIX.[1]

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[1]"Widows' Indemnity Compensation Rates", Army Times Reports (Washington: Army Times Publishing Company, 1963).

Survivors' benefits include a death gratuity equal to one-half year's basic pay not to exceed $3,000. This is in addition to the monthly DIC payments.

Military officers accrue leave at the rate of thirty days per year and may not accumulate more than sixty days. It is a common practice however, at least in the Navy, for an officer to forfeit one third to one half of his annual leave for lack of an opportunity to utilize it. Both the military and their commercial pilot counterparts are eligible for eight and seven national holidays per year respectively only when they are not scheduled for other duties.

The Department of Defense submitted the data in Table XX to the House Armed Services Committee during the June 1965 hearings on military compensation. Each category is calculated on a per capita basis and no statistical weight is attached to the relative numbers of senior and junior officers. Nevertheless, the writer feels that the figures shown under the supplementary benefits, particularly medical care, comissaries, exchanges and recreational facilities, give a fairly accurate picture of the worth of these benefits to the individual officer.

Benefits: United Air Lines. The benefits available

Tabke XX. Department of Defense Military Officer Pay and Benefit Projection, Fiscal Year 1966.

	Annual Amount	Dollars Per Capita	Percent of Pay
1. PAY			
Basic Pay	$ 2,407,913,000	$ 7,190.50	66.03%
Quarters	539,631,000	1,611.42	14.80
Subsistence	192,405,000	574.56	5.28
Hazardous Duty	261,922,000	782.15	7.18
Medical Incentive Pay	37,699,000	112.58	1.03
Clothing	10,774,000	32.17	.30
Family Separation	9,313,000	27.81	.26
Hostile Fire	2,241,000	6.69	.06
Federal Tax Exemptions	183,621,000	548.33	5.04
Miscellaneous	771,000	2.30	.02
TOTAL PAY	$ 3,646,380,000	$10,888.51	100.00%

2. SUPPLEMENTARY BENEFITS			
Pay for leave, holidays and sickness	293,728,000	877.13	8.06
Military retirement[1]	575,491,000	1,718.51	15.78
Social Security tax	60,286,000	180.03	1.65
Dependency and Indemnity Comper[1]	35,256,000	105.28	.97
Death gratuity	2,424,000	7.24	.07
Burial costs	801,000	2.39	.02
Medical care:			
Service personnel	42,455,000	126.78	1.16
Dependents	79,916,000	238.64	2.19
Separation Pay:			
Terminal leave[2]	48,978,000	146.26	1.34
Severance pay	10,691,000	31.93	.29
Reserve readjustment	250,000	.75	.01
Unemployment comp.	2,166,000	6.47	.06
Commissaries	16,978,000	50.70	.47
Post Exchanges	9,571,000	28.58	.26
Civilian education	11,401,000	34.05	.31
Recreational facilities	13,429,000	40.10	.37
Mortgage Insurance	3,123,000	9.33	.09
TOTAL, SUPPLEMANTARY BENEFITS	$1,206,944,000	$3,604.17	33.10%
Included in pay above	371,361,000	1,108,95	10.18
In addition to pay	835,583,000	2,495.22	22.92
3. GRAND TOTAL, PAY AND SUPPLEMENTARY BENEFITS	$4,481,863,000	$13,383.73	122.92%

[1]Annual accrual on an actuarial basis. [2]To terminate personnel only.

Source: Department of Defense (reprinted in Navy Times, June 23, 1965)

to the flight officers employed by United Air Lines are many. Company Group Life Insurance is provided to all UAL employees without cost. Cooperative Group Life and Group Accident-Sickness Insurance are made available at costs below those charged for individual policies.[1] The Company Group Life Insurance is provided in the amount of $3,000 to $5,000 depending on the employee's rate of pay. All flight officer personnel are eligible for the full amount after their first year with the company. The cooperative Group Life Insurance is in two parts. Part one consists of $10,000 worth of life insurance on the life of the employee and $1,000 on the live of the employee's wife. Part two provides an additional $10,000 of life insurance plus $100 of life insurance on each child up to six months of age and $500 on each unmarried child from six months to 21 years of age.

The Group Accident-Sickness Insurance provides for numerous categories of therapy and hospital benefits for the employee and his family. Amoung the major provisions are up to $4,000 for major medical benefits.

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[1]United Air Lines, Your Insurance As an Employee, 1963, p. 1.

The total cost to the employee (aviation premiums are included) of all four policies discussed above is $29.76 per month.[1]

The employee Stock Purchase Plan is open to all regular employees. The employee authorizes a payroll deduction of $2.50 to $50 per month. The company contributes up to an additional 15 per cent and the total amount is used to purchase shares of common stock on the open market at the prevailing price. The employees' and the company's contributions are credited to the individual's account and given to the employee upon termination of the plan. Each plan normally runs for three years.[2]

The United Air Lines Employees' Credit Union is operated independently by the employees and offers credit and saving facilities to its members. The Credit Union pays five percent interest on savings. Savings are not insurable under the FDIC. During 1964 the Credit Union

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[1] Ibid., p. 19.

[2] United Air Lines, You and United Air Lines, 1965, p. 9.

loaned $30,155,298 on 20,848 approved loan applications to United Air Lines employees at three fourths per cent per month on the unpaid balance up to $1,000 and one half per cent on the on the amount over $1,000.[1] This makes the real interest rate respectively nine and six percent.

Another benefit provided by United Air Lines are passes, reduced fare transportation and emergency pass privileges. In addition to an annual vacation pass, regular employees are allowed from four to eight annual trip passes for themselves and their families based on the employee's number of years with the company. A small service charge is made on employee trip and vacation passes. In addition to the pass provisions, most regular employees are eligible to use unlimited reduced fare transportation on a reserved space basis at half-fare or quarter-fare depending upon the employees' status with the company.[2]

Numerous other company policies and services exist

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[1]United Air Lines Employees Credit Union, Thirtieth Annual Report-1964, p. 8.

[2]United Air Lines, You and United Air Lines, 1965 pp. 2-9.

which are designed to improve company-employee relations and contribute to promote job satisfaction and morale but they could not be translated into dollars-and-cents benefits to the individual flight officer.

CHAPTER III

SUMMARY AND CONCLUSIONS

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Commercial aviation pilot requirements. There is a growing imbalance between the demand and the supply of trained flight officer personnel available to meet the growth needs and expected future attrition in the commercial aviation industry. While the imbalance is presently reflected only by localized intensification of recruiting on the part of the scheduled civil air carriers, the shortage will reach much larger proportions in 10 to 15 years and may become acute thereafter.

Annual attrition losses of air carrier flight officer personnel due to retirement, disability, or promotion to nonflying administrative positions, will increase substantially from the 1964 level of about 225 to about 1,200 per year between 1965 and 1980. During the same period pilot losses from the remainder of the professional pilot groups should increase from around 400 to a peak of about 2,100 per year in 1980.

The air carriers estimate that they will require approximately 400 flight officers annually between 1964

and 1980 to satisfy personnel requirements created by growth alone. This is in addition to pilot requirements for losses due to attrition. The rate of hiring of pilots by the airlines in 1964 ran below the number of younger pilots (below 35) being released by the Armed Forces. This relationship is likely to continue in the future.

More than half of the airline pilots currently employed received their flight training in the Armed Forces. Almost one half of the new pilots hired by the air carriers in 1963 and the first ten months of 1964 received their training in one of the Armed Forces. Military training for pilots is today but a fraction of what it was during World War II, and considerably below the lower peak reached during the Korean action, nevertheless the Armed Forces have been releasing and will continue to release several thousand pilots below the age of 35 each year. Additionally several thousand pilots above the age of 40 will continue to be released each year.

During 1964, the services planned to separate 3,720 flight officers between the ages of 27 and 34 and 1,649 between the ages of 43 and 48. Separation of flight officers aged 27 to 34 from the military will decrease to

1,820 annually by 1972. Retirements in the 42 to 48 age group will reach a peak of 1,840 pilots in 1970 and then decrease to 1,645 annually by 1972. Only a relatively small percentage of the military trained pilots separating from the services in the under 35 years of age group are apparently interested in pursuing a career as a professional pilot in any segment of aviation. It seems clear that there will be a steadily increasing demand for the services of those who are motivated for such a career.

Compensation comparison. The military pilot coming to the end of his initial period of obligated service upon completion of flight training is faced with an interesting choice if he desires to continue to use his acquired high level of training and skill in an aviation career. The "average" military flight officer who has spent four to five years in the service is usually married and has a real income (including fringe benefits) of approximately $10,800 per year. He has accumulated several thousand flying hours and is a throughly trained, highly skilled pilot. To accept airline employment he must start at the bottom as a copilot or flight engineer, often with men who have

only the minimum training and experience, and at a monthly salary that is approximately 40 percent less than his military pay at the time of separation. It is not an attractive choice.

On the other hand if he decides to accept the lower starting salary and leave the military, he will catch up to his former military contemporaries in terms of income in three to five years. If he stays with the military he can reasonably expect to retire in his early forties on $5,000 per year for life. Yet as a scheduled air line pilot he could expect to become a Captain in his early forties with an income of around $30,000 per year and still expect to have 15 or more years of productive employment at that salary before retiring on an income of over $1,000 a month.

Not only is the military career and promotion more uncertain than that of the scheduled air carrier pilot, his retirement pay is only one third as much although he will collect it for a 15 year longer period.

If two young military pilots were to make different decisions at age 25, one remaining with the military and the other going with a scheduled air carrier, how much

Table XXI

COMPENSATION COMPARISON SUMMARY: MILITARY VS. AIRLINE

age	years service (rank) Military	Airline	Monthly Income Military	Airline	Annual Income Military	Airline
26	4 (O-3)	0	$ 876	$ -	$10,512	$ -
27	5	1 (2P)	876	525	10,512	6,300
28	6	2	932	735	11,181	8,820
29	7	3	932	925	11,181	11,100
30	8	4	962	960	11,551	11,520
32	10 (O-4)	6	1043	1200	12,521	14,400
34	12	8 (1P)	1084	1744	13,013	20,928
36	14	10	1220	1744	14,643	20,928
38	16 (O-5)	12	1240	1816	14,879	21,792
40	18	14	1301	1816	15,614	21,792
42	20	16 (Capt)	1327	2753	15,920	33,036
44	retire	18	438	2753	5,256	33,036
46		20	438	2800	5,256	33,600

Notes:

1. All airline pay is figured at DC-8 composite rates (see Table XV).
2. Airline promotion data source: United Air Lines (2P: Second Pilot; 1P: First Pilot; etc.).
3. Military monthly income is based on basic pay, allowances and hazardous duty pay.
4. Military annual income is adjusted for value of fringe benefits (estimated by DOD as $600 per year; see Table XX).
5. Military rank assumes promotion at the earliest potential date to O-4 (MAJ/LCDR) and O-5 (LCOL/CDR). Some services require more years in grade

than shown.

6. The military age, years in grade, and rank structure is based on the "composite military pilot" discussed in Chapter I.

Sources: All data above is extracted from other Tables appearing in this study.

would each earn in his lifetime?

Picking an arbitrary life expectancy of 71 years and ignoring temporarily the military officer's employment potential after retirement, the military officer will receive approximately $375,000 and his contemporary roughly 925,000. To equalize the difference, the military officer would require a job paying over $27,000 per year from his retirement date at age 45 until he retires again at age 65. It is therefore concluded that the military pilot completing his first tour of obligated duty would be considerably better compensated should he follow the career of a commercial pilot.

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